



January 2016

U.S. BORDER COMMUNITIES

Ongoing DOT Efforts Could Help Address Impacts of International Freight Rail

Accessible Version

GAO Highlights

Highlights of [GAO-16-274](#), a report to congressional committees

Why GAO Did This Study

About 93 trains a day on average crossed into the continental United States from Canada and Mexico in 2014, according to DOT's Bureau of Transportation Statistics (BTS). Trains enter and leave the United States through 30 POEs—23 on the northern border and 7 on the southern border. Although international freight rail plays an important role in U.S. economic and trade interests, the movement of rail through U.S. communities at the border can result in blocked highway-rail grade crossings and vehicle traffic congestion. House Report 113-464 accompanying the Departments of Transportation, and Housing and Urban Development Appropriations Act included a provision for GAO to review the impact of international rail crossings on U.S. border communities.

This report (1) describes the factors that affect the movement of freight rail and the actions taken by federal agencies and others to expedite freight rail in selected POEs and (2) examines what is known about the impacts of freight rail operations on highway-rail grade crossings in POE communities. GAO visited four POE communities that were selected in part based on BTS's 2010–2014 data on average incoming train volume. In each POE, GAO interviewed officials from local and state governments, the railroad, CBP, and FRA. GAO also interviewed officials from DOT, CBP, the Border Trade Alliance, and the Association of American Railroads.

What GAO Recommends

GAO is not making recommendations in this report. DOT and CBP provided technical comments, which were incorporated.

View [GAO-16-274](#). For more information, contact Susan Fleming (202) 512-2834 or flemings@gao.gov

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U.S. BORDER COMMUNITIES

Ongoing DOT Efforts Could Help Address Impacts of International Freight Rail

What GAO Found

Factors such as inspections and crew changes affect freight rail movements in the four U.S. border port of entry (POE) communities GAO visited, which can result in blocked highway-rail grade crossings. Federal agencies and others have taken actions to expedite rail in these communities. As part of its mission to safeguard the border, U.S. Customs and Border Protection (CBP) scans inbound rail cars on both borders using the Rail Vehicle and Cargo Inspection System (R-VACIS), a machine used to detect anomalies and threats to national security. CBP generally requires trains to slow in order to pass through R-VACIS. To expedite freight rail and reduce blocked highway-rail grade crossings, CBP, for example, adjusted its procedures to allow certain trains to go through R-VACIS faster at two POEs on the northern border. Similarly, crew changes can result in stopped trains and blocked U.S. highway-rail grade crossings, particularly on the southern border. U.S. Department of Transportation (DOT) officials stated that crew changes are required due to differences in safety regulations between the U.S. Federal Railroad Administration (FRA) and Mexico. Railroads have expressed interest in eliminating such crew changes but face challenges such as FRA and labor union safety concerns.

The impacts of international freight rail on highway-rail grade crossings in communities GAO visited vary based on border-specific factors and community characteristics, and DOT improvement efforts including the issuance of a final rule could provide better data for help determining these impacts in the future. Inspections and crew changes, as well as rail traffic levels, can vary across POEs. For example, some factors play a role at southern, but not northern POEs. In addition, freight rail impacts vary based on community characteristics such as the availability of overpasses. State and local officials face data limitations, which reduce their ability to quantify rail-related community impacts. For example, local officials often do not have data on the number and length of trains passing through the community. In September 2014, GAO recommended that DOT improve the availability of national data to assess freight impacts on traffic congestion. DOT agreed and has actions under way. In January 2015, the FRA issued a final rule requiring railroads to update FRA's highway-rail crossing inventory once every 3 years. Prior to this rule, railroads voluntarily submitted data that were not always updated. DOT data efforts could better equip state and local governments to define the extent of blocked highway-rail grade crossings in communities nationwide, including at rail border communities.

A Highway-Rail Grade Crossing in Laredo, Texas



Source: GAO. | GAO-16-274

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Abbreviations

AAR	Association of American Railroads
BLET	Brotherhood of Locomotive Engineers and Trainmen
BTS	Bureau of Transportation Statistics
CBP	Customs and Border Protection
DOT	Department of Transportation
FRA	Federal Railroad Administration
MAP-21	Moving Ahead for Progress in the 21st Century Act
MPO	metropolitan planning organization
POE	port of entry
R-VACIS	Rail Vehicle and Cargo Inspection System

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January 28, 2016

The Honorable Susan Collins
Chairman
The Honorable Jack Reed
Ranking Member
Subcommittee on Transportation, Housing
and Urban Development, and Related Agencies
Committee on Appropriations
United States Senate

The Honorable Mario Diaz-Balart
Chairman
The Honorable David Price
Ranking Member
Subcommittee on Transportation, Housing
and Urban Development, and Related Agencies
Committee on Appropriations
United States House of Representatives

Approximately 34,000 trains—about 93 trains a day on average—crossed into the continental United States from Canada and Mexico through 30 ports of entry (POE) in 2014, according to the U.S. Department of Transportation's (DOT) Bureau of Transportation Statistics (BTS).¹ The vast majority of these trains carry freight such as chemicals, lumber, and manufactured goods.² According to BTS, freight rail carried about 15 percent of the total value of all U.S. freight flows between the United States and Canada and Mexico in 2014. In that year, trucks carried the majority (about 60) percent of these freight flows, which amounted to \$1.2 trillion worth of freight, in total.

¹The BTS does not collect data on outbound trains. However, trains also leave the United States through these same POEs. This 30 excludes Warroad and Baudette, Minnesota, which are in transit POEs, meaning that trains pass through but do not stop for inspection in the U.S. This also excludes Skagway, Alaska, because it is outside the continental U.S.

²Passenger trains pass into the U.S. through three northern POEs: Blaine, Washington; Buffalo-Niagara Falls, New York; and Champlain-Rouses Pt., New York. Amtrak runs 2 inbound trains a day through Blaine and 1 inbound train per day at the two New York POEs.

Although international freight rail plays an important role in U.S. economic and trade interests, the movement of rail through U.S. border communities where POEs are located can temporarily block highway-rail grade crossings and contribute to traffic congestion. We have previously reported that overall freight rail traffic has increased since 2009 and may exacerbate traffic congestion concerns in many communities nationwide.³ In addition, due to customs inspections and other processes at rail POEs, communities in these areas may face additional time that highway-rail grade crossings are blocked. In particular, as trains enter the United States, they are subject to inspections by the Department of Homeland Security's U.S. Customs and Border Protection (CBP). Trains entering from Mexico are also subject to equipment safety inspections required by the Federal Railroad Administration (FRA). Similarly, freight trains leaving the United States may be subject to inspections by Canadian or Mexican customs agencies. In addition, crew changes may occur, when the train is handed off between foreign and U.S. crews. As a result, trains may travel at slow speeds through or temporarily stop in rail POE communities. When this occurs as trains travel through highway-rail grade crossings, vehicle traffic must wait for the train to clear, potentially resulting in queues of vehicles, wait times, and increased congestion.

The House Report accompanying the Departments of Transportation, and Housing and Urban Development, and Related Agencies Appropriations Act of 2015 included a provision for us to review international rail border crossing times and the blockage of highway-rail grade crossings on the U.S. side.⁴ This report (1) describes the factors that affect the movement of freight rail through selected ports of entry and the actions taken by federal agencies and others to expedite freight rail in these locations, and (2) examines what is known about the impacts of freight rail operations on highway-rail grade crossings in U.S. port of entry communities.

To determine the factors that affect the movement of freight rail and the impacts of freight rail operations on highway-rail grade crossings in U.S. border communities, we selected nine rail POE communities—Nogales, Arizona; El Paso, Eagle Pass, Brownsville, and Laredo, Texas; Blaine, Washington; Ranier, Minnesota; Port Huron, Michigan; and Rouses Point,

³GAO, *Freight Transportation: Developing National Strategy Would Benefit from Added Focus on Community Congestion Impacts*. [GAO-14-740](#) (Washington, D.C., Sep. 19, 2014).

⁴H. R. Rep. No. 113-464 accompanying Pub. L. No. 113-235, 128 Stat. 2130 (2015).

New York. We selected communities that had at least one incoming train per day from 2010 through 2014 based on BTS border crossing data and excluded certain rail POEs, such as those outside of the continental United States or those with largely grade-separated infrastructure, meaning the rail line rarely intersects with vehicular traffic.⁵ Of these, we conducted visits to four rail POE communities—Brownsville and Laredo, Texas; Ranier, Minnesota; and Blaine, Washington—that were selected to include communities with heavy inbound train traffic and a mix of northern and southern border locations. At each site visit, we interviewed representatives from the city or county, the metropolitan planning organization (MPO, if applicable),⁶ the state department of transportation, CBP, FRA regional office, and the Brotherhood of Locomotive Engineers and Trainmen (BLET)—a union representing train operators. We also interviewed representatives from the five railroads that operate trains passing through each of the four rail POE communities we visited. For the remaining five of nine selected communities that we did not visit, we interviewed local officials by phone.⁷ Furthermore, we interviewed officials and reviewed documents from CBP, DOT, FRA, and Department of State and interviewed representatives of the American Association of State Highway and Transportation Officials, the Border Trade Alliance, and the Association of American Railroads (AAR). To examine what is known about the impacts of international freight rail operations on highway-rail grade crossings, we reviewed relevant DOT documentation such as the reporting requirements for the National Highway-Rail Crossing Inventory and interviewed DOT officials on available data sources. To estimate the total time highway-rail grade crossings are blocked in eight of the nine selected rail POE communities;⁸ we calculated the average time that freight trains would block key intersections in these communities based on the average speed of trains, length of trains, and frequency of trains that were reported by railroad representatives. We attempted to collect data from

⁵BTS does not collect data on outbound trains.

⁶Metropolitan planning organizations (MPO) are federally mandated entities responsible for carrying out the metropolitan transportation planning process in urbanized areas with a population of more than 50,000 people. (23 USC 134).

⁷We also interviewed officials from MPOs in Detroit, Michigan, and Buffalo, New York, to understand the impacts of international freight rail in these communities.

⁸Brownsville was excluded because at the time of our visit in late June to early July 2015, the new international rail bridge was nearing completion, and as a result, the railroad was in the process of changing its travel pattern, making it difficult to characterize the impacts of freight rail on the community.

five railroads,⁹ but we received incomplete information in response and were able to analyze information from two of these railroads.¹⁰ Finally, we observed the CBP inspection process and the geography and relevant highway-rail crossings in each community we visited to gain additional insights related to international freight rail and the related POEs.

We conducted this performance audit from February 2015 to January 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Canada and Mexico are the United States' first and third largest trading partners, respectively, and most freight between the United States and these countries is transported by truck and rail. Freight trains include bulk freight and intermodal freight. Bulk freight—such as grain, automobiles and component parts, coal, and chemicals—are transported in rail cars. For example, railroads deliver automotive parts made in the United States to assembly plants in Mexico by rail, and return finished automobiles from Mexico by rail. In addition, according to AAR representatives, bulk freight such as grain and lumber enters the United States along the northwestern border with Canada. Further, “intermodal” freight consists of containers carried by rail and transferred to or from other transportation modes, such as ships or trucks. For example, intermodal freight containers arrive at Prince Rupert in western Canada from Asia by ship and are transferred to rail and exported to the United States, entering through Ranier, Minnesota. Intermodal freight generally consists of consumer goods such as furniture and computers and, according to FRA, has been the fastest growing segment of the freight rail industry in the United States since 1980.

⁹These railroads were: Kansas City Southern Railway Company, Union Pacific Railroad Company, BNSF Railway Company, Canadian National Railway Company, and Canadian Pacific Railway.

¹⁰We received information from three railroads, but information from one of these railroads was incomplete.

Inbound international rail traffic has grown over the past 5 years, but the increase is not uniform across U.S. POEs and is projected to increase further in certain POEs. According to BTS data, the number of inbound trains increased 6 percent on the northern border and 29 percent along the southern border from 2010 through 2014.¹¹ All international rail traffic enters and exits the continental United States through 30 different rail POEs—23 along the Canadian border and 7 along the Mexican border.^{12,13} The top 8 rail POEs on the northern and southern borders carried 68 percent of inbound rail traffic while 14 rail POEs—mainly along the northern border—received less than one inbound train a day on average over the past five years according to BTS data (see fig. 1). Ranier, Minnesota, and Laredo, Texas, have the highest number of inbound trains on the northern and southern borders with an average of 10 and 9 trains per day from 2010 through 2014, or an average of 3,675 and 3,466 inbound trains per year, respectively. Some stakeholders predict growth in international rail traffic in certain POEs. For example, representatives from one railroad noted that intermodal traffic through Ranier, Minnesota, will continue to grow since the port at Prince Rupert in Canada has announced an expansion of its capacity. In addition, carmakers announced that they have added

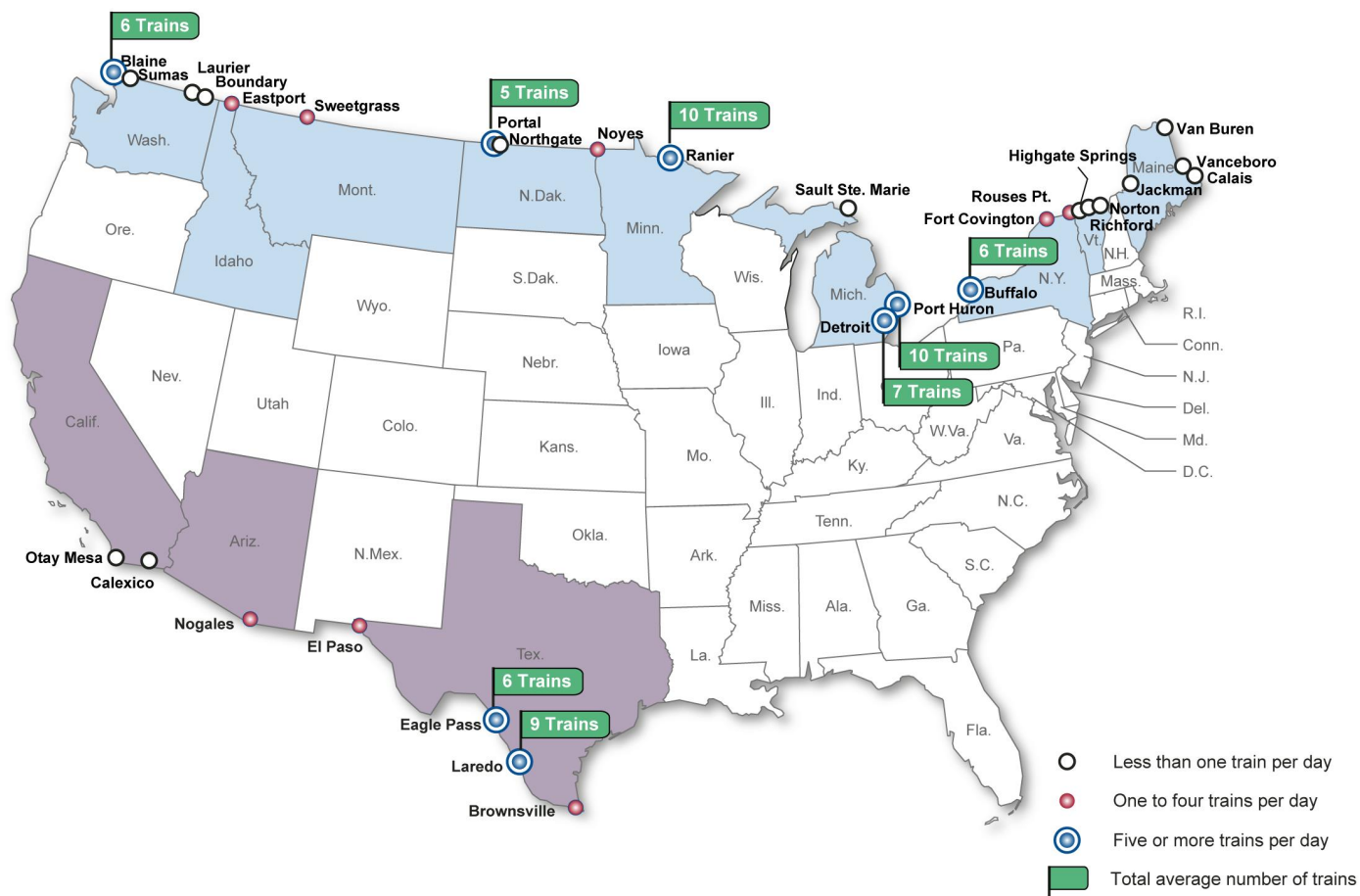
¹¹BTS does not collect data on outbound trains. However, railroad representatives in the four POEs we visited noted that the same number of trains travel inbound as outbound in those locations on a typical day.

¹²This 30 excludes Warroad and Baudette, Minnesota, which are in transit POEs, meaning that trains pass through but do not stop in the U.S., and thus are not subject to full CBP inspections. This number also excludes Skagway, Alaska, because it is outside the continental U.S. In some cases, the official POE name differs from the name of the U.S. community with the international rail line. For the remainder of this report we will refer to the name of the rail POE communities rather than the POE name. As a result, we refer to the International Falls POE as Ranier, Minnesota; the Pembina, North Dakota POE as Noyes, Minnesota; the Buffalo-Niagara Falls POE as Buffalo, New York; the Champlain-Rouses Pt. POE as Rouses Pt., New York; and the Trout River/Fort Covington/Chateaugay POE as Fort Covington, New York.

¹³According to BTS data, there were 88 POEs where at least one truck per day entered the continental United States in 2014.

additional plants and increased capacity in Mexico, which is likely to result in additional automotive traffic by rail over the southern border.¹⁴

Figure 1: The 30 Rail Port of Entry Communities and Average Daily Number of Inbound Trains, 2010–2014



Source: GAO analysis of Bureau of Transportation Statistics data and Map Resources (map). | GAO-16-274

¹⁴Audi of America, Inc., *Audi on track for growth in Mexico*, (Ingolstadt, Germany: Jan. 22, 2014); The BMW Group, *BMW group to build plant in Mexico*, (Munich, Germany and Mexico City, Mexico: Mar. 7, 2014); General Motors Co., *GM to Invest \$5 billion in Mexico from 2013-2018*, (Federal District, Mexico: GM News, Dec. 11, 2014); Honda, *Honda Increases North American Manufacturing Footprint with Production Start of Fuel-Efficient, Subcompact Vehicles at New Auto Plant in Mexico*, (Celaya, Mexico: Feb. 21, 2014).

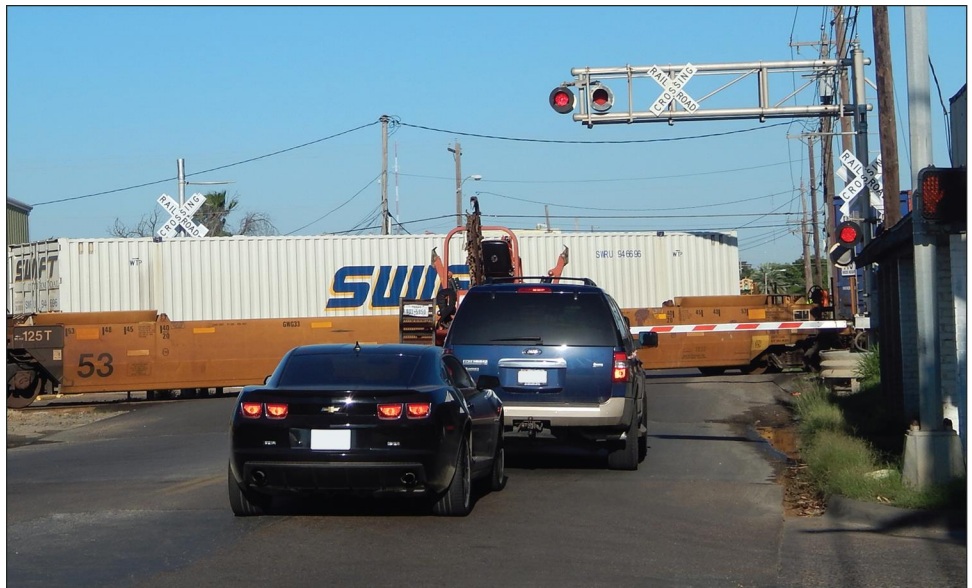
Train movements can result in blocked highway-rail grade crossings, where vehicular traffic must wait to cross the tracks when trains are slowed or stopped (see fig. 2). The amount of time that highway-rail grade crossings are blocked depends on a number of factors, and is typically a function of the number, speed, and length of trains. Blocked highway-rail grade crossings can contribute to community vehicular congestion, and communities face challenges prioritizing and funding projects to alleviate these impacts. Negative community effects resulting from blocked highway-rail grade crossings include delays to motorists, blocked emergency vehicles, and quality of life impacts.¹⁵ State and local departments of transportation, which have primary responsibility for building, maintaining, and operating roads, can plan and fund projects to alleviate freight-related traffic congestion. In addition, some MPOs assist state and local governments in planning and prioritizing such projects, including grade separation projects such as overpasses and underpasses to allow vehicular traffic to bypass freight rail movements. The freight rail system operates almost exclusively on infrastructure that is owned, built, maintained, and funded by private railroads, particularly the seven largest freight railroads.¹⁶ Generally, train movements within the United States are dispatched, or controlled, by railroad personnel located in the United States.¹⁷

¹⁵[GAO-14-740](#).

¹⁶These railroads are referred to as Class I railroads. Freight railroads are classified based on operating revenues. Class I railroads have annual operating revenues of \$467 million or more. As of 2013, AAR reported that the seven Class I railroads are BNSF Railway Company, CSX Transportation, Grand Trunk Corporation, Kansas City Southern Railway Company, Norfolk Southern Combined Railroad Subsidiaries, Soo Line Corporation, and Union Pacific Railroad Company.

¹⁷See 49 C.F.R. § 241.9—Prohibition against extraterritorial dispatching; exceptions.

Figure 2: A Highway-Rail Grade Crossing in Laredo, Texas



Source: GAO. | GAO-16-274

While DOT has a role in directing federal transportation policy, including freight rail, FRA issues regulations as part of its role to oversee the safety and reliability of the national freight network. In 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) transportation reauthorization established a framework for a national freight policy and, among other things, directed DOT to develop a national freight strategic plan.¹⁸ The plan was to be developed in consultation with state departments of transportation and other transportation stakeholders and was to include best practices to mitigate the impacts of freight movements on communities. MAP-21 also required DOT to encourage states to develop freight plans with a description of procedures to guide states' investment decisions involving freight transportation. FRA issues regulations that set requirements for train crews and equipment operating in the United States. Additionally, FRA manages a National Highway-Rail Crossing Inventory that provides a uniform national database of the nation's highway-rail grade crossings, which can be used for planning and implementation of crossing safety improvements. According to the FRA, train lengths in general have been increasing in recent years and agency

¹⁸Pub. L. No. 112-141, §1115, 126 Stat. 405, 468. 23 U.S.C. § 167(f).

regulations do not place restrictions on the amount of time trains can block highway-rail grade crossings or on train lengths. Representatives from two railroads noted that current maximum train lengths are generally 10,000 feet—or about 2 miles. These representatives noted that these maximum train lengths are largely determined based on the capacity of the current rail system infrastructure.

As part of its mission to safeguard U.S. borders while enabling legitimate trade and travel, CBP has personnel, including CBP Agricultural Specialists, located at rail POEs that scan inbound trains for security threats. CBP procedures generally include the following, which CBP officials said may vary slightly by POE:

- *Advanced targeting:* About 2 hours before the train arrives at the border, CBP electronically obtains the train's manifest, which provides information on the train's contents, from the railroad. Using CBP's Automated Targeting System, CBP officials identify rail cars deemed high-risk for additional inspection.¹⁹ For example, as part of efforts to identify high-risk shipments, CBP Agricultural Specialists check the manifest against U.S. quarantine regulations.
- *Rail Vehicle and Cargo Inspection System (R-VACIS):* Inbound trains slow to pass through R-VACIS, a machine that produces an image of the inside of railcars using gamma radiation technology (see fig. 3). CBP officers review the scanned images for anomalies that may indicate the presence of un-manifested goods and contraband, including threats that could pose a risk to national security.

¹⁹CBP's Automated Targeting System is an Intranet-based enforcement and decision support system that compares traveler, cargo, and conveyance information against intelligence and other enforcement data.

Figure 3: R-VACIS in Blaine, Washington, (left) and a train proceeding through R-VACIS in Laredo, Texas (right)



Source: GAO. | GAO-16-274

- *Secondary physical inspections:* Depending on the outcome of the advanced targeting and R-VACIS scan, CBP conducts secondary physical inspections of rail cars.

Both DOT and CBP participate in working groups consisting of representatives from the United States, Canada, and Mexico that seek to improve processes related to the safety and fluidity of international trade, including freight rail. Coordination between the United States and Mexico and Canada is generally framed by larger government-to-government partnerships. The U.S.-Canada Beyond the Border Initiative addresses cross border policies and the U.S.-Canada Regulatory Cooperation Council coordinates the joint development of regulatory standards between the United States and Canada, and the High Level Economic Dialogue between Mexican and U.S. officials is designed, in part, to secure trade flows and cross-border cooperation between the two countries. In addition, the Transportation Border Working Group between

the United States and Canada and the U.S.-Mexico Joint Working Committee on Transportation Planning focus on transportation issues. For example, the U.S.-Mexico Joint Working Committee on Transportation Planning led efforts to create border master plans to prioritize transportation needs along the southern border, including at rail POEs. To develop these border master plans, local, regional, state, and federal stakeholders on both sides of the border coordinated to prioritize transportation projects.

Inspections and Crew Changes Affect Rail Movements in Selected POE Communities, and Some Actions Have Been Taken to Expedite Trains

Customs Inspections Affect Train Movements on Both Borders and CBP Has Modified Procedures in Certain Locations

In all four communities we visited, stakeholders such as railroads, local officials, and BLET representatives identified R-VACIS inspection procedures, which affect inbound trains, as a key source of reduced train speeds. CBP has directed that inbound trains pull through the R-VACIS at a predetermined rate of speed set by CBP in order to obtain and review quality scans.²⁰ The impacts of R-VACIS inspections on train movements and highway-rail grade crossings can vary by the location of the R-VACIS. According to CBP officials, the machine is typically located right at the international border, with the exception of three locations on the northern border. The R-VACIS in Blaine is located approximately 3 miles inland from the Canadian border.²¹ According to a railroad representative in Blaine, the average maximum length of trains at this POE is 6,500 feet. Based on our

²⁰According to a 2004 CBP report, R-VACIS can scan moving freight train rail cars with a speed up to 5 miles per hour.

²¹CBP officials say the inland location of R-VACIS in Blaine is due to building restrictions on protected land near the border.

calculations, it would take a train of this length approximately 15 minutes to pass through the R-VACIS at 5 miles per hour and may affect one or two highway-rail grade crossings. In contrast, CBP officials stated that the R-VACIS machines at the Port Huron and Detroit, Michigan, POEs are located in Canada. Trains pass through the R-VACIS in these locations at a predetermined speed and, once scanned, can proceed to enter the United States at a higher speed. CBP officials noted that these placements, which resulted from a Declaration of Principles for the improved security of rail shipments from Canada to the United States, were necessary because the tunnel infrastructure at these POEs requires that trains exit at high speeds. CBP officials also noted that they do not have the authority to physically inspect cargo in Canada.²²

In addition, when secondary physical inspections occur, they may require trains to slow and stop, and CBP officials stated that the location of the inspections varies by POE and threat level CBP designated to the shipment. CBP officials also said that higher-risk threats, such as shipments containing suspected unauthorized persons (known as stowaways) or weapons, are inspected immediately and that lower-risk threats, such as paperwork discrepancies, are inspected later further away from the border. For example, CBP officials stated that CBP does not use R-VACIS to intentionally scan for people; however, CBP officials in Laredo said that if CBP officers do detect a stowaway on the train, the individual must immediately be secured and removed and could result in the train being stopped for about 45 minutes, during which highway-rail grade crossings on the U.S. side may be blocked. CBP officials in Laredo stated that eight stowaways were inadvertently detected on these trains last year, mostly at night. Meanwhile, more routine secondary physical inspections may involve stopping the train, uncoupling cars, reversing, stopping, and going forward again in order to set aside a rail car for CBP. Depending on the rail infrastructure at the POE, this process may result in trains blocking highway-rail grade crossings.²³ For example, in Blaine, a

²²According to CBP officials, if CBP officers want to physically inspect a train, they notify CBP officers in the United States to conduct the inspection upon its arrival. These officials also stated that in order to physically inspect cargo in Canada, CBP would require greater authority than that provided by the signing of a Declaration of Principles with Canadian Customs which requires legislative approval in both countries to go into effect.

²³According to a CBP Laredo official, as of October 2015, routine physical inspections at this POE are being conducted at the railroad's secondary exam station or warehouse. According to this official, only immediate threats result in stopped trains at the rail POE crossing.

BLET representative noted that putting a rail car aside for CBP, which generally occurs near the location of the R-VACIS, can take over an hour while blocking highway-rail grade crossings.

As previously mentioned, CBP's primary mission is to maintain national security, and CBP officials report that they operate on risk-based assessments. However, CBP has taken steps to expedite customs inspections at some POEs. CBP officials note that at the POE level, CBP often works together with local communities to develop protocols to expedite rail and minimize the impact on vehicular traffic. In at least two POEs on the northern border, CBP has adjusted the R-VACIS procedures to expedite freight rail. In Blaine, CBP allows empty coal trains through at an increased speed predetermined by CBP during daylight hours unless information received indicates a security risk or there is an operational need, thereby reducing the estimated average blocked highway-rail grade crossing time. In Ranier, a CBP official noted that CBP held meetings to review operations and, as a result, increased the maximum allowable R-VACIS speeds to a predetermined rate of speed set by CBP. One CBP official stated that CBP will not sacrifice security for expediency. In addition, at one POE, the railroad coordinated with CBP to expedite secondary inspections. Specifically, in Ranier, railroad officials said that the railroad invested approximately \$10 million in equipment, staff, and infrastructure to build a "live lift" system to allow the removal of only the container of interest from intermodal trains for immediate inspection, instead of uncoupling the entire car which could hold several containers (see fig. 4). CBP officials and representatives from the railroad in Ranier stated that this investment reduced the overall secondary physical inspection process time and train delays, as well as the amount of time trains blocked a nearby highway-rail grade crossing.

Figure 4: The “Live Lift” System at Ranier, Minnesota



Source: GAO. | GAO-16-274

CBP officials in Laredo and DOT officials stated that trains going into Mexico are also subject to customs inspections, including R-VACIS scans, conducted by Mexican customs officials, which can result in slowed and stopped outbound trains and blocked highway-rail grade crossings in the United States.²⁴ AAR representatives stated that Mexico is becoming more aware of the need to streamline processes and increase efficiency, particularly now that automobile manufacturing is expanding in Mexico, and U.S. railroads have been working with Mexican officials and other stakeholders to improve processes. For example, AAR

²⁴ CBP officials and railroad representatives at the two northern border POEs we visited stated that Canada does not use R-VACIS to scan inbound trains, and does not stop trains at the border for inspections. As a result, trains generally leave the United States at unimpeded speeds on the northern border. For example, a railroad representative in Blaine reported that outbound trains go through Blaine at a minimum of 45 miles per hour.

representatives said that they meet regularly with customs agencies in the United States, Canada, and Mexico, and that they support a Trans-border Committee comprised of member railroads from all three countries to promote simplification and the development of electronic reporting systems to expedite freight rail traffic. At the POE level, CBP officials do not have authority over train movements once trains have crossed the border into Mexico or Canada.²⁵

Brake Inspections Affect Inbound Trains on the Southern Border, and FRA Has Waived Certain Requirements to Expedite Trains

Trains entering the United States from Mexico must stop at the border for FRA-required brake inspections, and FRA has waived certain requirements to expedite this process.²⁶ FRA regulation requires crews to perform full brake tests on trains at the origin location or at the interchange point, which is generally at the border as the trains enter the United States.²⁷ An FRA region official stated that full brake tests were previously conducted with the whole train on the U.S. side, which could block highway-rail grade crossings for up to an hour. These brake tests include performing an air leakage test to ensure air brake pressure is maintained throughout the train, as well as a visual inspection of each car's air brakes.²⁸ Since the early 2000s, FRA has granted waivers to railroads to conduct abbreviated brake inspections at the border, provided the railroad submits a waiver request that meets certain criteria and is consistent with railroad safety. U.S. railroads on the southern border now have FRA brake inspection waivers in all but one POE, and FRA officials and railroad and BLET representatives said that such waivers to allow abbreviated brake tests have resulted in expedited train movements.²⁹ The abbreviated brake tests allowed through the waiver can

²⁵We did not speak with Mexican or Canadian customs officials for this report.

²⁶Railroads must submit a waiver petition to FRA for consideration, and FRA will publish a notice seeking public comment and may conduct a field investigation or a public hearing if necessary. If FRA determines to grant a waiver, such waivers last for up to 5 years and may be renewed upon request.

²⁷On the northern border, according to DOT officials, FRA accepts brake inspections conducted in Canada due to greater harmonization of FRA regulations with Canadian regulations and strong similarities in safety requirements.

²⁸49 C.F.R. § 232.205 *Class I Brake test-initial terminal inspection* states that each train and each car in the train will receive a Class I brake test by a qualified person, who has the required training, qualification, designation, and instruction to perform such functions. Throughout this report we refer to Class I brake tests as full brake tests.

²⁹FRA has issued brake waivers for both of the southern POEs we visited—Laredo and Brownsville, Texas.

take 20 to 25 minutes according to BLET representatives in Laredo. An abbreviated brake test requires a visual roll-by inspection and a set-and-release test of the air brakes where the crew uses an end of train device to ensure air pressure is reaching the end of the train.³⁰ As a condition of the waiver, crews are then required to conduct a full brake inspection at a U.S. rail yard away from the border.

Despite FRA's efforts to expedite brake inspections along the southern border, inbound trains sometimes arrive from Mexico with missing or damaged equipment which can cause delays. According to BLET and railroad representatives in Laredo, trains from Mexico often arrive in the United States with missing "end-of-train devices" that are required for the abbreviated brake test, which can cause delays up to an hour as train crews locate a replacement device. In addition, railroad and BLET representatives in Laredo noted that it is common for other train equipment to be tampered with, a situation that requires the train to be stopped until repairs can be completed.

The Rail Safety Improvement Act of 2008 prohibits FRA from accepting mechanical and brake inspections of rail cars performed in Mexico before entering the United States unless, among other criteria, FRA certifies that the inspections are being performed under regulations and standards equivalent to those applicable in the United States.³¹ Moreover, according to DOT officials, FRA officials cannot verify brake inspections conducted in Mexico, in part, because the FRA officials face challenges coordinating with their counterparts due to security concerns.³² As a result, brake inspections occur on the border between the United States and Mexico, typically on a bridge. According to DOT officials, greater harmonization between the pertinent U.S.

³⁰49 C.F.R. § 232.211 *Class III Brake tests-trainline continuity inspection*. Throughout this report we refer to Class III brake tests as abbreviated brake tests. An "end-of-train device" is a portable electronic device placed at the end of freight trains to monitor air brake pressure.

³¹Under Pub. L. No. 110-432 § 416, 122 Stat. 4890 (2008) as codified in 49 U.S.C. § 20107. For brake tests to be accepted from Mexico, inspections must meet certain criteria that are certified by the Secretary of Transportation.

³²The Department of State places travel restrictions on U.S. government employees in Mexico. U.S. government employees are subject to movement restrictions and a curfew between the hours of midnight and 6 a.m. in the Mexican state of Tamaulipas due to violent crime. This includes Matamoros and Nuevo Laredo, which are the cities adjacent to Brownsville and Laredo, respectively.

and Mexican regulations could result in the United States' accepting brake inspections conducted in Mexico. DOT officials noted that although they would like to discuss rail regulatory and safety issues with Mexico and considers rail-related issues on occasion, no rail regulation harmonization efforts are currently underway, in part because Mexico is currently restructuring its rail regulatory body in an effort to increase its rail investments and networks. Furthermore, the U.S.-Mexico working group's coordination efforts such as the U.S.-Mexico Joint Working Committee on Transportation Planning, have had limited initiatives focused specifically on freight rail issues, having instead focused on issues facing passenger vehicles and freight trucks. As we have previously mentioned, 60 percent of the freight that moves between the United States and Canada and Mexico is carried by truck.

Crew Changes Affect Inbound and Outbound Trains on the Southern Border due to Factors Such as Differing Safety Regulations

DOT officials told us that inbound and outbound trains on the southern border are required to stop at the border to change crew due to lack of comparable rail safety regulations between the United States and Mexico.³³ While a BLET representative stated that crew changes can take 3 to 5 minutes, this can vary greatly depending on crew availability. For example, BLET and railroad representatives in Laredo noted that crews, who deliver trains to the rail yard and then are driven by a rail crew van to the border to pick up another train, can get delayed at the yard or on the way back to the border by traffic congestion. Such delays, according to a BLET representative in Laredo, can result in crew changes exceeding 2 or 3 hours. FRA regulations establish minimum federal safety standards for the eligibility, training, testing, certification, and monitoring of all locomotive engineers and conductors.³⁴ According to DOT officials, the lack of Mexican safety regulations for the qualification and certification of locomotive engineers and conductors that are comparable to FRA regulations

³³FRA stated that crew changes are not mandatory on the northern border as the safety and qualification regulations and labor unions in Canada more closely resemble those in the United States. Of the two locations on the northern border we visited, only crews in Ranier changed at the border, which railroad representatives noted was in part for logistical and transportation considerations. Ranier city officials noted that eliminating crew changes could increase speeds and reduce the amount of time Ranier's one highway-rail grade crossing is blocked. However, railroad representatives noted that eliminating crew changes, which do not result in stopped trains blocking this highway-rail grade crossing, would have a minimal impact on speeds at this location.

³⁴49 C.F.R. Parts 240 and 242 *Qualification and certification of locomotive engineers and conductors*.

prohibits the United States from allowing Mexican crews to operate trains in the United States. In addition, as previously mentioned, while greater regulatory harmonization could result in Mexican crews being able to operate in the United States, DOT officials noted that Mexico is currently focused on creating a rail transport regulatory agency. According to DOT, FRA will invite Mexico to attend the annual North American Rail Safety Working Group Meeting in 2016 in an effort to encourage further harmonization.

Two railroads have expressed interest in developing an international pool of crew to eliminate the need for crew changes on the southern border; however, DOT and CBP officials, and BLET representatives cited barriers to this initiative. Specifically, DOT officials stated that qualification and certification regulations, varying operating rules and hours of service for crews, and labor and union concerns would need to be addressed. Additionally, CBP officials in Laredo stated that they do not currently have the capability needed to facilitate processing an international crew.³⁵

BLET representatives also noted concerns such as liability for damages and personal injury and security if U.S. crews were to operate in Mexico, since federal workplace laws are not applicable to U.S. citizens injured on the job while working abroad.³⁶ BLET representatives also noted concerns with personal security of crew members while on board the train or when returning to the United States by vehicle after delivering the train to its destination in Mexico. These representatives also noted that exceeding the federal maximum allowable hours of service might become an issue given delays re-entering the United States at the vehicle border crossing.³⁷

CBP and FRA have limited information on the effects of the above factors on rail movements. Although CBP has personnel located at the border, it does not have visibility into all factors affecting train movements. For example, trains are often operated at restricted speeds through POEs, meaning speeds are dictated by factors such as the train's stopping distance and the train operator's range of vision. According to BLET

³⁵CBP officials stated that crews from Mexico and Canada require proper admissibility documents to enter the United States.

³⁶Federal Employers Liability Act c. 149, 35 Stat.65 (1908) codified as amended in 45 U.S.C. § 51, *New York Central Railroad Company v. Chisholm, Administrator*, 268 U.S. 29 (1925).

³⁷49 U.S.C. §21103 set the hours of work and rest of train employees.

representatives in Ranier, speeds can be anywhere from 0.5 to 10 miles per hour through town due to the long stopping distances of heavy trains combined with limited visibility as a result of factors such as inclement weather or the track curvature, regardless of factors such as CBP inspections. Meanwhile FRA, which is primarily focused on the safety of trains operating within the United States, does not have staff located at POEs. Instead, FRA officials stated that they rely on voluntary reporting from railroads on any delays occurring and the reasons for these delays. FRA officials noted that it is difficult to obtain data from railroads on the cause and extent of train-related delays in POEs. CBP and FRA officials stated that they rely on communication with stakeholders to inform decisions such as modifying CBP procedures or brake test waiver requirements. As discussed later in this report, FRA has undertaken efforts to improve the availability of data on freight rail movements, including those at POEs.

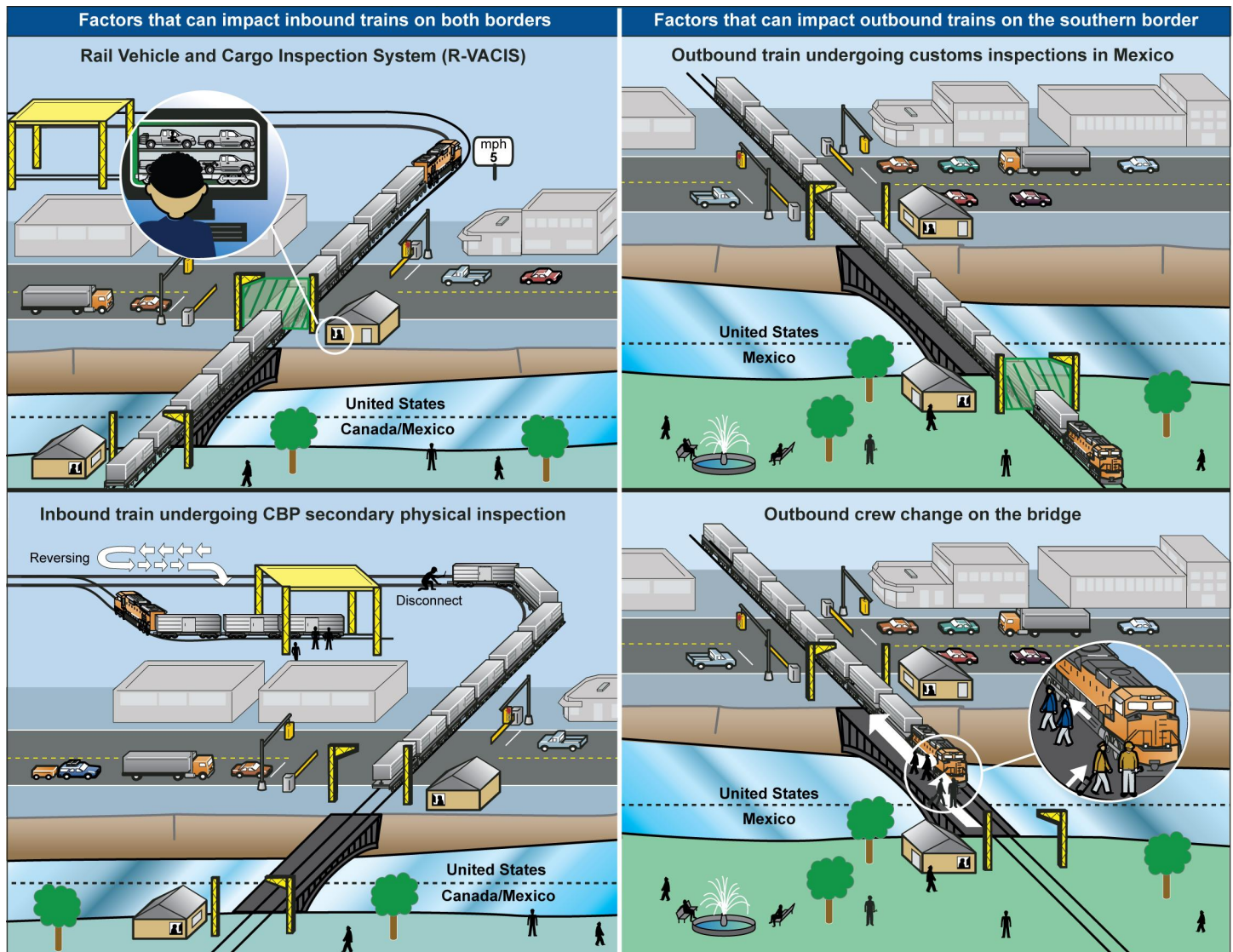
International Freight Rail Impacts Vary by Community GAO Visited, and DOT's Data Improvement Efforts Could Help Determine the Extent of Blocked Highway-Rail Grade Crossings

Impacts of International Freight Rail on Communities GAO Visited Vary Based on Border-Specific Factors and Community Characteristics

The factors noted above—customs inspections, brake inspections, and crew changes—can slow or stop trains travelling through U.S. POEs and consequently block highway-rail grade crossings in those communities, but different POEs are affected differently. As noted in Figure 5, the effect of factors such as customs inspections can vary based on whether the community is located on the southern or northern border. For example, an outbound crew change can result in the train stopped in one or more highway-rail grade crossings on the southern border, but is less likely to occur on the northern border because of greater harmonization, among other factors, between U.S. and Canadian safety regulations. In addition, although U.S. customs inspections can block U.S. highway-rail grade

crossings for inbound trains on both borders, foreign customs inspections primarily impact outbound trains on the southern border.

Figure 5: Examples of Factors That Can Affect the Time That Highway-Rail Grade Crossings Are Blocked in U.S. Port of Entry Communities



Source: GAO. | GAO-16-274

The extent to which the above factors may result in a train blocking a highway-rail grade crossing and delaying vehicular traffic also vary due to community characteristics, such as the number and location of highway-

rail grade crossings and the availability of overpasses. For example, as noted below, in Ranier, railroad representatives estimated that one key highway-rail grade crossing is blocked for about 8 hours per day. In contrast, MPO officials in Buffalo and Detroit reported that international freight rail movements have minimal impact on traffic congestion in those cities because the rail lines are largely grade-separated, meaning the rail line rarely intersects with vehicular traffic.

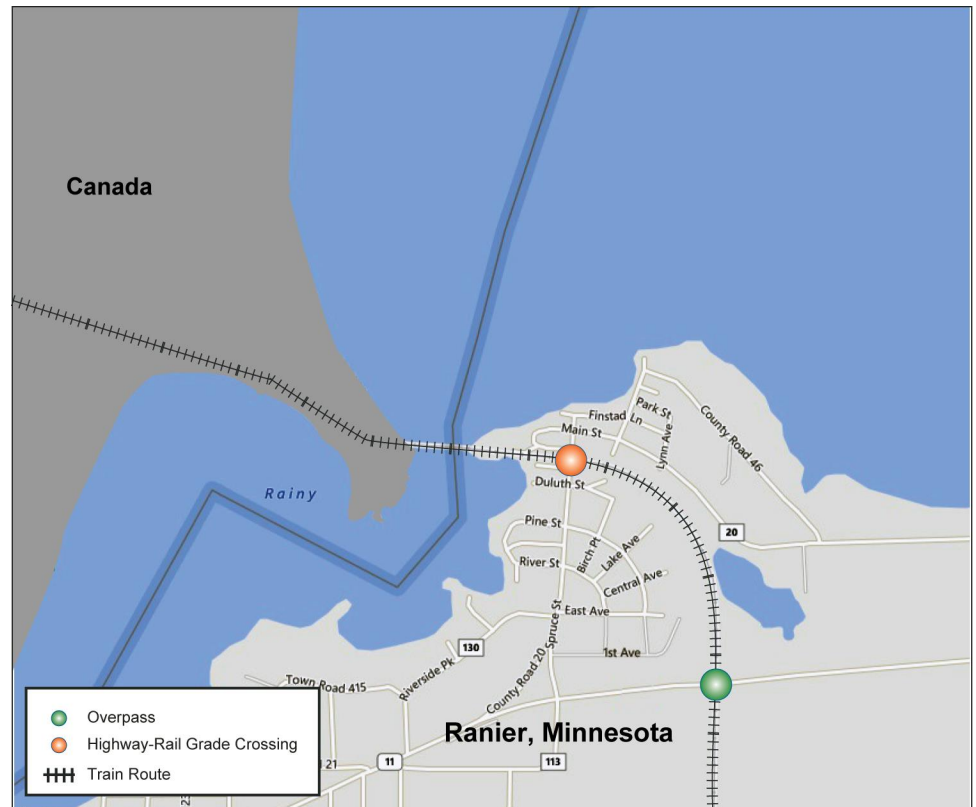
Furthermore, we have previously found that although communities may have long-standing concerns with the negative effects of highway-rail grade crossings, they have varying levels of quantified information on impacts such as traffic delay times or costs.³⁸ Similarly, POE communities we visited provided some estimates of the amount of time highway-rail grade crossings are blocked, but were unable to provide data on the actual extent of blockage. For example, local officials in Blaine note that hour-long traffic disruptions can result from blocked highway-rail grade crossings, with 30 minutes waiting for the train and another 30 minutes waiting for the vehicle traffic queue to clear. However, local officials reported they did not have information on how regularly such delays occurred due to a lack of data.

The following discussion of the rail POE communities we visited illustrates how their characteristics impacted highway-rail grade crossings.

- **Ranier, Minnesota:** Ranier is a community of 145 according to the 2010 Census, and is located about 3 miles northeast from the larger community of International Falls, Minnesota. Within Rainer, there is one highway-rail grade crossing—Spruce Street (see fig. 6).

³⁸[GAO-14-740](#).

Figure 6: At-Grade and Grade Separated Highway-Rail Crossings in Ranier, Minnesota



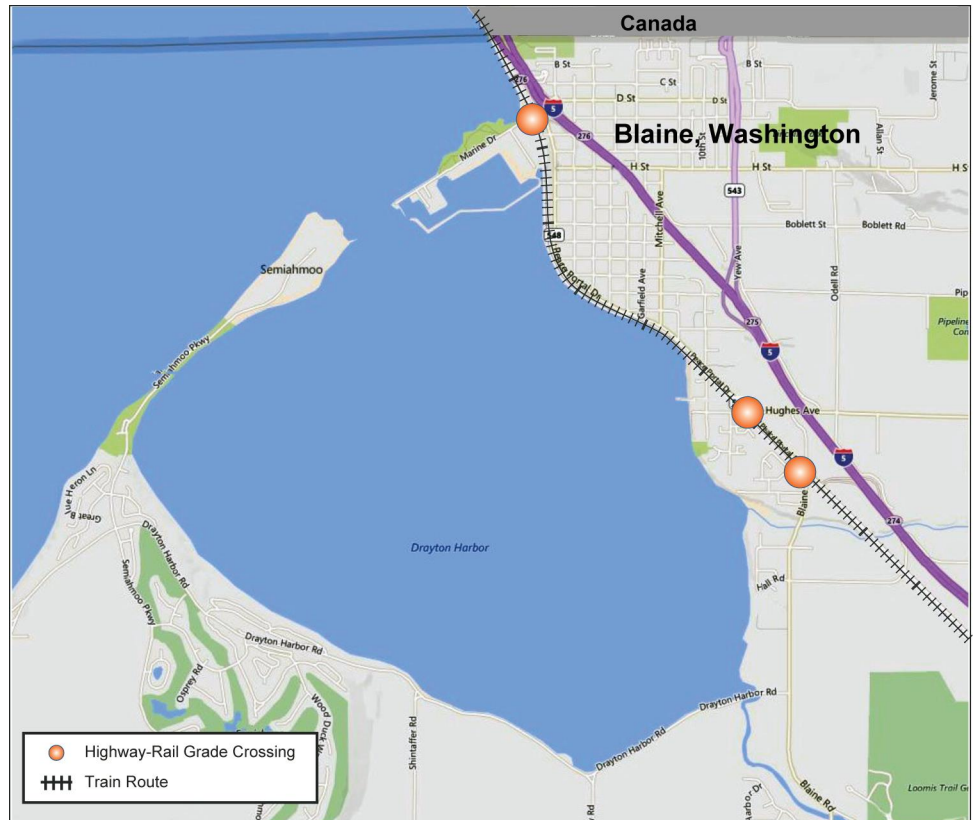
Sources: GAO analysis of Federal Railroad Administration data and MapInfo. | GAO-16-274

Spruce Street is blocked about 8 hours per day by the 20–22 trains traveling through per day—about 11 in each direction—according to representatives from the railroad. These representatives arrived at this total by estimating that a southbound train takes about 25 minutes to pass the highway-rail grade crossing, and a northbound train takes about 15 minutes, which amounts to over 7 hours a day for 11 trains to pass in each direction. These representatives report that the train traffic is distributed across nighttime and daytime hours because of the railroad’s aim to move traffic over its network evenly, which results in about one train travelling through Spruce Street per hour, including through the night. Speeds are slowed for inbound trains through Spruce Street due to CBP’s R-VACIS, although, as mentioned previously, CBP has taken efforts to expedite R-VACIS and the

railroad and CBP have worked together to implement the live lift system to expedite secondary inspections. According to local officials, the blockage of Spruce Street has had a debilitating effect on businesses located north of Spruce Street. These officials report that due to the proximity of the Spruce Street intersection to Rainy Lake, it is impossible to build an overpass at that location. However, an overpass located approximately a mile away helps vehicle traffic reroute to get around the train. According to an FRA region official, the situation in Ranier does not constitute a serious effect on vehicle traffic, particularly compared with POE communities on the southern border and given the presence of the overpass.

- **Blaine, Washington:** Blaine, which is 35 miles south of Vancouver, Canada, is bordered on the north by the U.S./Canada border. The community—population 4,684 according to the 2010 Census—includes both Central Blaine to the east and West Blaine, where the Semiahmoo resort and marina are located. The rail line is located close to the waterfront through Central Blaine. Local officials report that two key highway-rail grade crossings are affected by freight rail movements— Hughes Avenue, a sole access point to a neighborhood of approximately 300 residents; and Bell Road, a key route connecting Central Blaine to West Blaine’s resort and marina (see fig. 7).

Figure 7: Highway-Rail Grade Crossings in Blaine, Washington



Sources: GAO analysis of Federal Railroad Administration data and MapInfo. | GAO-16-274

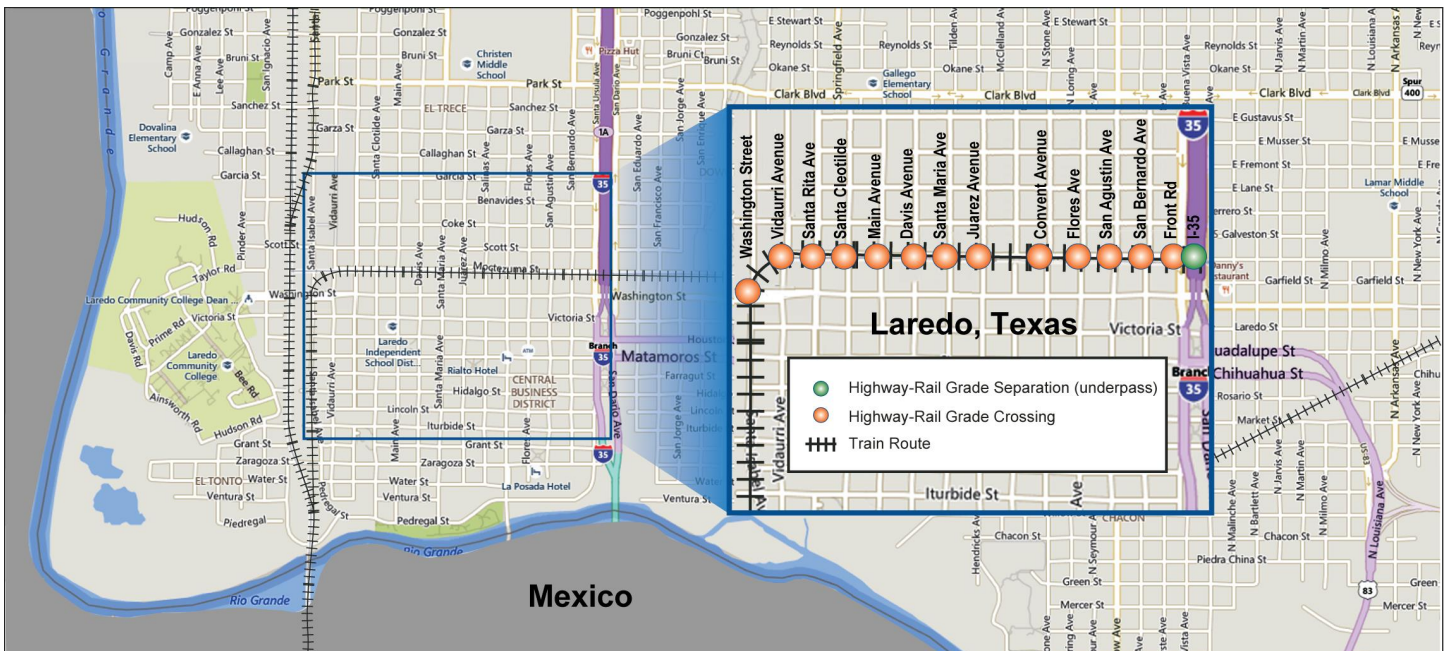
According to railroad representatives, 12 freight trains pass per day—6 in each direction—through Blaine, at both day and nighttime hours.³⁹ Local officials attribute issues related to blocked highway-rail grade crossings in Blaine to the R-VACIS; however, as mentioned previously, CBP has adjusted its procedures to enable certain trains to go through R-VACIS faster. Local officials were unable to provide data on the amount of time Hughes Avenue and Bell Road are blocked, and noted that it is difficult to fund traffic studies that take train traffic into

³⁹In addition, according to the state DOT, 4 passenger trains pass through Blaine per day—2 northbound and 2 southbound. This Amtrak route runs from Oregon to Vancouver, Canada. However, according to local officials, passenger trains travel through Blaine at higher speeds than freight trains and are less of an issue in terms of blocked highway-rail grade crossings.

account, in part because the railroad does not contribute funding. Within Blaine there are no overpasses to enable traffic to reroute around trains. Furthermore, local officials reported it is not feasible to construct overpasses over Hughes Avenue and Bell Road due to geographic limitations such as the location of homes and a creek.

- Laredo, Texas:** The 2010 census reported that Laredo is a city of approximately 236,000, and every day about 22 trains travel through Laredo—11 inbound and 11 outbound, according to CBP officials. Information provided by one of the railroads indicates that this traffic is fairly evenly split between daytime and nighttime hours. According to a 2006 study prepared for the MPO and the city, Laredo has over 80 highway-rail grade crossings which are split fairly evenly between two rail lines, which are operated by two different railroads and carry traffic in different directions through the city. A railroad representative noted that train traffic has recently been evenly split between these two rail lines. One of these rail lines bisects the downtown area, with 13 at-grade highway-rail crossings located at about every block (see fig. 8).

Figure 8: Selected Highway-Rail Grade Crossings in Laredo, Texas



Sources: GAO analysis of Federal Railroad Administration data and MapInfo. | GAO-16-274

According to an MPO official, the majority of complaints regarding blocked highway-rail grade crossings are along this downtown portion of the rail line. CBP officials in Laredo noted that a single stopped train can stretch from the border to near Interstate 35, a distance of approximately 2 miles, blocking all of the highway-rail grade crossings in between, including the 13 located downtown. These officials noted that this can affect traffic downtown, including lawyers who are cut off from the federal courthouse located on the other side of the rail line from their offices. In 2012, the Laredo region developed a Border Master Plan, which convened local, regional, and federal officials on both the U.S. and Mexico side of the border to prioritize border transportation projects. According to Texas state DOT officials, the Border Master Plan demonstrated the need for accurate data, including on current and future vehicular traffic levels, for analyzing costs and benefits and prioritizing projects. In addition, in 2015, a Laredo MPO-commissioned study gathered data on the number of trains passing through the community and speed from the Highway Rail Crossing Inventory, as well as vehicular traffic counts. However, since this study was primarily focused on actions to reduce train horn noise, it did not calculate the total amount of time highway-rail grade crossings are blocked.⁴⁰

- **Brownsville, Texas:** A community of about 175,000 people according to the 2010 Census, Brownsville currently has about 4 to 8 trains pass through the community per day, according to a railroad representative. On August 25, 2015, the first new international rail crossing between the United States and Mexico in 105 years was inaugurated in Brownsville. The new rail bridge relocates rail traffic away from the downtown area to the outskirts of Brownsville, with only one highway-rail grade crossing, and eliminates 14 highway-rail grade crossings downtown. Although moving the rail line outside of town has been discussed in other southern rail POE communities such as El Paso and Laredo, only Brownsville has succeeded in moving the rail

⁴⁰Under the train horn rule, locomotive engineers must begin to sound train horns at least 15 seconds in advance of all public highway-rail grade crossings. The rule also provides an opportunity for communities to mitigate the effects of train noise by establishing “quiet zones.” To do so, communities must first mitigate the increased risk caused by the absence of a horn, such as implementing lights and gates at highway-rail grade crossings. 49 C.F.R. Part 222.

POE out of the downtown area.⁴¹ A Cameron County official noted that project planning began in the 1990s, that much of the data used to prioritize the project was taken from a detailed feasibility study, and that other communities should now have an easier time proposing similar projects given that states are more involved with freight rail planning. According to a county official, the U.S. portion of the project cost over \$40 million and most of the funding came from federal sources, including the American Recovery and Reinvestment Act of 2009.⁴² According to a railroad representative, the railroad agreed to transfer a portion of its existing right of way land to the county in exchange for the new right of way and infrastructure constructed by the county. Therefore, the railroad's contribution to the project was the value of the land exchange rather than directly contributing funding for the new construction. In addition, a county official noted that coordinating with officials from Mexico and CBP were key challenges. Specifically, this official noted that monitoring the progress of the project on the Mexican side and coordinating with CBP on its requirements for the new bridge, such as the relocation of R-VACIS, posed challenges. CBP officials in Brownsville noted that the project did not begin with good coordination, and cited the need for strong coordination as a "lesson learned." CBP, FRA region, and Brownsville MPO officials noted that the long-term success of the new rail bridge will largely depend on development of the area.⁴³ These officials stated that increased development may result in new highway-rail grade crossings, which could result in traffic issues over time. A railroad representative noted that rail traffic through Brownsville is expected to increase in the future.

The effect that freight rail may have on communities also varies based on the time of day that trains pass through the rail POE communities, as well

⁴¹A new rail POE is currently being studied in Santa Teresa, New Mexico, to divert rail traffic away from downtown El Paso, Texas. In addition, Laredo, Texas, has proposed three different locations for a new rail bridge over the years, although according to a representative from one railroad that operates through Laredo, none of these proposals is currently being actively pursued.

⁴²Pub. L. No. 111-5 123 Stat. 115 (2009). According to the county official, the costs for the bridge on the Mexico side were \$80 million, for a total project cost of over \$120 million.

⁴³According to the Brownsville MPO representative, the City of Brownsville is responsible for zoning changes. This representative recommends changing the zoning in the immediate vicinity of the new rail corridor, which currently allows for residential development.

as efforts made by railroads to prevent trains from blocking certain highway-rail grade crossings. For example, as noted above, trains pass through Ranier, Minnesota, around the clock, at an average of one per hour according to railroad representatives. Therefore, about half of the trains run through at night, when vehicle traffic is less and traffic congestion not an issue. In addition, according to railroad representatives and MPO officials in El Paso, trains cross the border during night time and early morning hours due to a Juarez, Mexico, city ordinance that restricts train movements to those times. In some situations, railroads have worked to avoid blocking certain highway-rail grade crossings. For example, in Laredo, a railroad representative noted that crews make best efforts to avoid blocking a trucking route and street with a school nearby during school hours. In addition, in Blaine, a CBP official reported that the railroad tries to limit the number of trains going through the community during the morning rush hour to avoid delaying school buses.

DOT's Data Improvement Efforts May Help Determine Extent of Blocked Highway-Rail Grade Crossings in Rail POE Communities

We have previously found that a lack of publicly available data on freight rail movements and estimates of their impacts on vehicular traffic in communities across the United States creates difficulties in defining the extent of the problem and prioritizing potential solutions.⁴⁴ Specifically, we found that limitations in both national and state and local data on freight rail movements reduce the ability of state or local officials to quantify freight rail community impacts nationwide and that these limitations create challenges to appropriately prioritizing efforts to address freight rail impacts against other types of funding priorities. At the national level, data on freight-related traffic congestion for local communities have limitations in terms of timeliness and completeness. At the local level, communities have limited data such as the number of trains and length of trains assigned by date, speed, and time. As we have previously found, communities often find it difficult to communicate with the railroad industry to obtain information on the number, timing, and speed of trains.

We requested data directly from the railroads in order to quantify the extent that freight rail movements blocked highway-rail grade crossings in a selection of rail POE communities. Specifically, we requested data on the number of trains, the length of trains, and the speed of trains from railroads that operate in these POEs. This information would allow us to

⁴⁴[GAO-14-740](#).

estimate train blockage time at highway-rail grade crossings in these communities. However, although we requested data directly from the five railroads that operate in eight selected rail POE communities,⁴⁵ we received complete information from two of the railroads.⁴⁶ Based on this data, we calculated the time selected highway-rail grade crossings are blocked and found highway-rail grade crossings in two communities—Ranier and one of the two rail lines in Laredo—to be blocked on average 16-19 minutes per train.⁴⁷

Recent DOT efforts could help improve the availability of freight rail data needed to assess community impacts such as blocked highway-rail grade crossings for communities across the country, including POE communities. FRA maintains the National Highway-Rail Crossing Inventory that includes information such as the estimated number of daily trains in communities and the typical range of speed of trains that pass through a highway- rail grade crossing. However until recently this information was voluntarily submitted by railroads and states and according to FRA officials was not always current. On January 6, 2015, FRA issued a final rule requiring railroads to update the inventory once every 3 years.⁴⁸ FRA officials said that the rule should improve the quality of the data, but that these improvements will not be fully evident for several years. Improved information on the average number of daily trains could better equip state and local governments to identify community congestion impacts from freight rail—including blocked highway-rail grade crossings located in POE communities along the border. Furthermore, in

⁴⁵We selected these communities based on BTS data on the number of inbound trains. BTS does not collect data on number of outbound trains or train length or speed.

⁴⁶We received information from three railroads but information from one of these railroads was incomplete. We did not receive information from two railroads. As one railroad representative noted, it is problematic for railroads to obtain information on train speeds as speeds are typically managed by maintaining average speeds between points along a route's corridor. A representative from another railroad referred us to the national Highway-Rail Crossing Inventory for all data.

⁴⁷This includes both inbound and outbound trains. While the data from these railroads allowed us to calculate examples of blockage times, they do not allow us to calculate the range of blockage times that might be experienced in communities with different rail patterns. In particular, if we had obtained data on trains with different lengths and different speeds, we may have identified a different range of blockage times.

⁴⁸49 C.F.R. Part 234, 80 Fed. Reg. 746 (Jan. 6, 2015). This final rule implemented section 204(a) of Rail Safety Improvement Act of 2008, Pub. L. No. 110-432, Division A, Title II (Oct. 16, 2008) codified at 49 U.S.C. § 20160.

a November 2015 letter to congressional committees regarding a surface transportation bill, DOT Secretary Anthony Foxx noted that given the concerns regarding blocked crossings in many communities, FRA would benefit from authorization and funding to study blocked crossings to collect information as to the severity, frequency, and other characteristics of railroad operations that block highway-rail grade crossings. Secretary Foxx also noted that neither the House or Senate versions of the bill propose such authorization and funding. On December 4, 2015, President Obama signed into law the Fixing America's Surface Transportation Act, which did not contain such provisions regarding blocked crossings.⁴⁹

In addition, in September 2014, we issued a report on freight-related community impacts and recommended, among other things, that DOT incorporate additional information to help states define and prioritize local community impacts of national freight movements, including traffic-congestion impacts, and to establish what data could be consistently collected and analyzed in order to prioritize impacts of freight on local traffic congestion in its final guidance to states in the development of their state freight plans.⁵⁰ We also recommended that DOT include a strategy for improving the availability of national data needed to quantify, assess, and establish measures of freight trends and impacts on local traffic congestion for inclusion in its National Freight Strategic Plan. DOT agreed with our recommendations. On October 18, 2015, DOT issued a draft *National Freight Strategic Plan* for public comment. The draft noted that DOT should work closely with state and local governments and international partners, as well as private stakeholders, to coordinate strategies and investments and noted that new freight traffic data sources and improved public-private cooperation on state freight plans will assist in this effort. The draft also noted that DOT should continue to engage in strong border infrastructure planning with border states through working groups with Canada and Mexico. We will continue to monitor the status of DOT's response to our recommendations and DOT's efforts related to the *National Freight Strategic Plan*. A DOT strategy on data to prioritize the impacts of freight related traffic congestion in the *National Freight*

⁴⁹However, the Act stated that FRA shall develop a model of a state-specific highway-rail grade crossing action and distribute the plan to each state not later than one year after enactment. The plan shall include, among other things, methodologies for identifying and evaluating highway-rail grade crossing safety risks, including the risks posed by blocked highway-rail grade crossings due to idling trains. See Pub. L. No 114-94 § 11401 (2015).

⁵⁰[GAO-14-740](#).

Strategic Plan, along with improvements to the National Highway-Rail Crossing Inventory, could help address data limitations at both the national and local levels and help communities—including POE communities—better define impacts from blocked highway-rail grade crossings and prioritize projects to mitigate such impacts.

Agency Comments

We provided a draft of this report to DOT and CBP for review and comment. In a response (reproduced in app. II), DOT highlighted efforts to minimize community impacts of international freight rail movement. DOT and CBP provided technical comments, which we incorporated.

We are sending copies of this report to the appropriate congressional committees, the Secretary of the Department of Transportation, and the Secretary of the Department of Homeland Security, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staffs have any questions about this report, please contact Susan Fleming at (202) 512-2834 or Flemings@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Major contributors to this report are listed in appendix III.



Susan A. Fleming
Director, Physical Infrastructure Issues

Appendix I: Objectives, Scope, and Methodology

This report (1) describes factors that affect the movement of freight rail through selected ports of entry and the actions taken by federal agencies and others to expedite freight rail in these locations, and (2) examines what is known about the impacts of freight rail operations on highway-rail grade crossings in U.S. port of entry communities.

To determine the factors that affect the movement of freight rail through selected ports of entry and the actions taken to expedite freight rail in these locations, we interviewed officials and reviewed documents from Customs and Border Protection (CBP), the U.S. Department of Transportation (DOT), the Federal Railroad Administration (FRA), and Department of State. We also interviewed representatives from the American Association of State Highway and Transportation Officials, the Border Trade Alliance, the Association of American Railroads, and the Brotherhood of Locomotive Engineers and Trainmen (BLET)—a union which represents train operators that we identified from prior GAO work. We interviewed FRA officials and reviewed FRA documentation regarding crew changes and brake inspections, including applicable regulations and FRA waiver decisions regarding brake inspections. We also interviewed DOT, FRA, and CBP officials and reviewed documentation on international working groups involving transportation issues on both the northern border (i.e., the U.S.- Canada Regulatory Cooperation Council and the Transportation Border Working Group) and the southern border (i.e., the U.S.-Mexico High Level Economic Dialogue and the U.S.-Mexico Joint Working Committee on Transportation Planning). To determine what is known about the impacts of freight rail operations on highway-rail grade crossings in U.S. POE communities, we also reviewed previous GAO reports and recommendations and interviewed DOT officials on available data sources and reviewed relevant documentation, such as the reporting requirements for the National Highway-Rail Crossing Inventory.

To determine the factors that affect the movement of freight rail and the impacts of freight rail operations on highway-rail grade crossings, we selected nine rail POE communities— Nogales, Arizona; El Paso, Eagle Pass, Brownsville, and Laredo, Texas; Blaine, Washington; Ranier, Minnesota; Port Huron, Michigan; and Rouses Point, New York. These communities were selected because they had at least one inbound train on average per day from 2010 through 2014, according to DOT's Bureau of Transportation Statistics' (BTS) Border Crossing data. As part of this selection, we excluded 11 communities where the rail POEs were in transit (where trains pass through but are not subject to full CBP procedures), outside of the continental United States, did not cross incorporated communities, or have largely grade-separated infrastructure.

We conducted visits to four of these selected communities—Brownsville and Laredo, Texas; Ranier, Minnesota; and Blaine, Washington—that were selected based on factors such as those with heavy inbound train volume from 2010 through 2014 according to BTS data, complaints received by CBP about blocked crossings, and a mix of northern and southern border locations. We also selected locations where actions had been taken to mitigate congestion or expedite rail, such as Brownsville, Texas, for its construction of a new international rail bridge. At each of the four site visits, we interviewed representatives from the city or county, the Metropolitan Planning Organization (if applicable), the state department of transportation, the FRA regional office, and BLET. We also interviewed representatives from the 5 railroads that operate trains through each selected POE. In each site visit we also interviewed officials from CBP and observed their inspection process as well as the geography and relevant highway-rail crossings of the community. We calculated the average time that freight trains would block key highway-rail grade crossings in selected communities based on the average speed of trains, length of trains, and frequency of trains that were reported by railroad representatives. To do so, we developed a data collection instrument and attempted to collect information from five railroads¹ on the number, length, and speed of trains passing over the three highway-rail grade crossings closest to the international border on a typical weekday in July 2015 in eight of the selected communities.² As we note in the report, although we requested information from five railroads, we received incomplete information in response and were able to analyze information from two of these railroads.³ In order to better understand the impacts of international rail in these communities, we spoke to local officials from the city or MPO by phone in each of the five selected communities that we did not visit (Nogales, Arizona; El Paso and Eagle Pass, Texas; Port Huron, Michigan; and Rouses Point, New York). We also interviewed officials from the MPOs in Detroit, Michigan and

¹These railroads were: Kansas City Southern Railway Company, Union Pacific Railroad Company, BNSF Railway Company, Canadian National Railway Company, and Canadian Pacific Railway.

²Brownsville was excluded because at the time of our visit in late June to early July 2015, the new international rail bridge was nearing completion, and as a result, the railroad was in the process of changing its travel pattern, making it difficult to characterize the impacts of freight rail on the community.

³We received information from 3 railroads but information from one of these railroads was incomplete.

Buffalo, New York, to understand the impacts of international freight rail in these communities.

We developed maps to provide context regarding the level of international freight rail traffic and impacts on communities. Specifically, we used BTS data to calculate the average number of inbound trains per day from 2010 through 2014 by POE and displayed this information on a map. To determine the reliability of BTS data, we reviewed related documentation and interviewed knowledgeable agency officials. We determined these data were sufficiently reliable for our purpose of providing contextual information. We also developed maps including the location of at-grade and grade separated highway-rail crossings for three of the four communities we visited—Ranier, Minnesota; Laredo, Texas; and Blaine, Washington. We did not include a map of Brownsville, Texas, since its rail traffic patterns are currently changing due to the construction of a new international rail bridge. To develop these maps, we used data from the National Highway-Rail Crossing Inventory, as well as maps and observations obtained from our in-person visits to these communities. By reviewing related documentation, interviewing knowledgeable DOT officials, and comparing the data to our site visits, we determined the data were sufficiently reliable for the purpose of developing maps.

Appendix II: Comments from the U.S. Department of Transportation



U.S. Department
of Transportation

Office of the Secretary
of Transportation

Assistant Secretary
for Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

JAN 14 2016

Susan Fleming
Director, Physical Infrastructure Issues
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Ms. Fleming,

The U.S. Department of Transportation has invested significant resources toward improving international freight rail movement while minimizing impacts to communities. Actions to reduce local impacts are critical as freight movements, particularly freight rail, are projected to increase substantially over the next 30 years. Highlights of our efforts include the following:

- Releasing a draft National Freight Strategic Plan for public comment that noted the need for closer collaboration between State and local governments, international partners, and private stakeholders to improve freight movement while minimizing the impacts to local communities. The draft plan also identified existing data gaps that this increased collaboration could help to fill.
- Engaging in working groups with Canada and Mexico to coordinate transportation planning and investment.
- Enhancing our highway-rail grade crossing data. The Federal Railroad Administration issued a final rule in early 2015 requiring states and railroads to update the National Highway-Rail Crossing Inventory at least once every three years.
- Requiring railroads to have an Emergency Notification System which allows the public to directly report potentially unsafe conditions immediately and directly to the railroads.

The Department is committed to building upon its efforts to improve the flow of freight movements while minimizing community impacts. We will continue to seek solutions to the most challenging issues in international freight rail movements, whether it is enhancing data on highway-rail grade crossings or ensuring that proper coordination occurs between States, local governments, private stakeholders, and our international partners.

We appreciate this opportunity to offer an additional perspective on the GAO draft report. Please contact Madeline M. Chulumovich, Director of Audit Relations and Program Improvement, at (202) 366-6512 with any questions or additional details about our comments.

Sincerely,


Jeff Marootian

Assistant Secretary for Administration

Appendix III: GAO Contacts and Staff Acknowledgments

GAO Contact

Susan Fleming, (202) 512-2834 or Flemings@gao.gov

Staff Acknowledgments

In addition to the individual named above, Sharon Silas (Assistant Director), Mark Braza, Delwen Jones, Rick Jorgenson, Emily Larson, John Mingus, Ian P. Moloney, Cheryl Peterson, Nada Raoof, and Malika Rice made key contributions to this report.

Appendix IV: Accessible Data

Agency Comment Letter

Text of Appendix II:
Comments from the U.S.
Department of Transportation

Page 1

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